

# ABSTRACT

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Disclosed is a unique system and method for recognizing the type of modulation embedded in an unknown complex baseband signal, comprising a receiver section for extracting the complex baseband signal from a modulated signal having a carrier frequency, and comprising an orderly series of signal processing functions for (a) estimating the bandwidth of the unknown signal, (b) removing the out-of-band noise and correcting gross carrier frequency errors, (c) discriminating between constant envelope and irregular envelope signals, (d) estimating and correcting residual carrier frequency errors, (e) classifying a constant envelope signal into one of the following modulation formats: {Continuous Wave (CW), Frequency Modulation (FM), Frequency Shift Keying (FSK)}, and (f) classifying an irregular envelope signal into one of the following modulation formats: {Amplitude Modulation (AM), Double Sideband Suppressed Carrier (DSB-SC), Binary Shift Keying (BPSK), Quaternary Phase Shift Keying (QPSK),  $\pi/4$ -shifted QPSK, M-ary PSK (MPSK), and OTHER classes}.

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